

REMARKS

Applicants have amended claims 1, 5-7, 9-11 and 13 and added new claims 21-22. Support for new independent claims 21 and 22 can be found, for example, with reference to FIG. 1 and paragraph [0036]. No new matter has been added to the application by virtue of the present response. Thus, claims 1-15 and 21-22 are pending in the subject application.

Objection to the Specification

Applicants have made appropriate correction to paragraph [0022] as suggested by the Examiner.

Therefore, Applicants believe the objection to the specification has been overcome.

Claim Rejections - 35 U.S.C. 102(e)

The Examiner has rejected claims 1-5 and 8 under 35 U.S.C. 102(b) as being anticipated by Endo et al. (US Patent No. 5,177,583); claims 1-3 under 35 U.S.C. 102(e) as being anticipated by Sadovnikov (US Patent No. 6,967,144); and claims 1-15 under 35 U.S.C. 102(e) as being anticipated by Toyoda et al. (US Patent No. 7,135,721).

Applicants have amended independent claim 1 to recite the limitation of "... a base region formed on said substrate comprising a non-dopant ..." (emphasis added). Both Endo and Sadovnikov are silent on a base region which includes a non-dopant such as carbon. Endo and Sadovnikov only disclose a dopant (e.g. boron) in the base region (Endo: see Fig. 1 and column 11, lines 55-61; Sadovnikov: see Fig. 3 and column 2, lines 35-46).

Applicants have amended independent claims 1 and 9 to include the limitation related to "an emitter-base junction region" (or a collector-base junction region) formed by out-diffusion of an impurity (e.g. dopant) from at least one of the first and second regions or layers that form the

emitter (or collector). Support for Applicants amendment can be found, for example, in paragraph [0025] and with reference to FIG. 1 of the present application where emitter-base junction region 34 is formed by out-diffusion of dopant from emitter layer 36 and emitter layer 38. Applicants claimed invention includes an emitter 32 which comprises at least two emitter layers 36 and 38 wherein each of the emitter layers 36 and 38 are different from the emitter-base junction region 34. Emitter layers 36 and 38 are each in-situ doped (e.g. in-situ As doped polysilicon) (see FIG. 1 and paragraph [0036] of the present application) so that the doping concentrations of each layer 36, 38 of the emitter can be individually controlled as well as more precisely controlled as opposed to depending on out-diffusion to dope one of the emitter layers.

Toyoda does not disclose, teach or suggest Applicants' claim 1 or 9, as amended. Toyoda does not disclose an emitter having at least two regions or layers wherein each of the layers are different from an emitter-base junction region. Rather, Toyoda discloses a region 14a which is formed by out-diffusion of dopant from a single emitter layer 15. Region 14a of Toyoda is basically Applicants' emitter-base junction region 34. Thus, Toyoda is silent on an emitter having an additional emitter layer.

Therefore, Applicants believe that the rejections of the claims under 35 U.S.C. 102(e) have been overcome and it is respectfully requested that the pending claims be passed to issuance in view of the amendments and remarks.

Prior Art Made of Record

The prior art made of record and not relied upon, Sato et al. (US Patent Application Publication No. 2003/0201461), has been reviewed and Applicants believe that Sato does not anticipate, teach or suggest claims 1 and 9, as amended, or claim dependent thereupon.

CONCLUSION

In light of the foregoing remarks and amendments, all of the claims now presented are believed to be in condition for allowance, and Applicants respectfully request that the outstanding objections be withdrawn and this application be passed to issue at an early date.

The Examiner is urged to call the undersigned at the number listed below if, in the Examiner's opinion, such a phone conference would aid in furthering the prosecution of this application. Applicants request a one month extension of time by virtue of the present response. Please charge Applicants' deposit account, 09-0456, a fee of \$120 for a one month extension of time which is due by virtue of this response, and for any additional fee that the PTO determines is due.

Respectfully Submitted,

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